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FROM

EXPERIMENT STATIONS

SEASON 1952-53

SOUTHERN RHODESIA

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SOUTHERN RHODESIA

COTTON RESEARCH STATION, GATOOMA
PROGRESS REPORT FOR THE SEASON 1952-53

BY

F. E. M. GILLHAM.

Planting:—November 20th to December 17th, 1952.
Flowering:—Mid March to mid April 1953.
Picking:—June 6th to September 23rd, 1953.
Legal Uprooting Date:—October 1st.

Staff.

The Station's experimental programme was planned by Mr. R. W. James, who left at the end of January to take up an appointment with the Tobacco Research Board.

Between the time of Mr. James' departure and the arrival of the writer on June 10th, the experimental work was conducted by Mrs. N. Fitt, Technical Assistant, with advice from Mr. A. H. McKinstry, who now holds the post of Cotton Development Officer.

Mr. Waister, a graduate of Edinburgh University, joined the staff as plant breeder on August 27th.

Meteorological.

Total rainfall: 43·16 inches, between September 15th, 1952, and April 20th, 1953.

There was not sufficient rain for germination until December 13th. Cotton planted before this date was all dry-planted, and considerable losses resulted from rats taking seed which lay in the soil for nearly three weeks before germinating.

After this dry period, rain fell almost every day up to 6th March. The lands were badly waterlogged and cultivation was not possible until late in March; it was only completed for the first time on 1st April.

The late planting combined with the retarding effect of the waterlogging resulted in a very late crop, which developed during a period when the American bollworm attack was at its severest. The insect population and the severity of the bacterial blight attack were probably also increased by the very wet season.

The only part of the crop which gave any sort of yield was the female parent material and a small area of 9L34 commercial bulk which was sprayed with DDT and BHC at weekly intervals. The female parents received ten applications and the 9L34 received six.

Plant Breeding.

Crossing Programme.

The crossing programme comprised backcrossing of A5851 and A618 on to last year's A5851 × Albar 49 and A618 × Albar 49 crosses. Crosses were also made between A5851 and Albar 51 and A618 and Albar 51. The Albar 51 lines used were numbers 627, 632, 637, 640 and 645, natural seed samples which were received from Namulonge in 1952.

Selections.

Last year's crosses containing Albar 49 were selected for bacterial blight resistance and for jassid resistance.

Albar 51 was also selected for bacterial blight and jassid resistance. Selections were made on internal symptoms resulting from prick inoculations. According to this method five immune plants were selected.

Selections were made in F_2 material for jassid resistance.

No selection was possible for yield or lint quality owing to the severity of the insect pest attack. Most plants gave so little seed cotton that no satisfactory analytical results could be obtained.

Replicated Progeny Trials and Replicated Progeny Rows.

These trials of selections made in 9L34 were planted on tied ridges. Waterlogging was very severe and cultivation during the latter half of January and the whole of February was out of the question. Plant growth was severely retarded and the yield was so low that there can be no question of using results for analytical and selection purposes.

District Variety Trials.

The results of these do not look promising. Yields, on the whole, were poor owing largely to insect damage. The crop was very late and it has not been possible to complete the analysis of these trials before submitting this report.

The trial on the Cotton Station got away to a good start but was retarded by waterlogging and then nearly wiped out by insects. The yield was very poor and little information is expected from this trial.

Agronomy.

No trials were conducted during the season but the following observations were made:

Plants grown on both tied (replicated progeny trial) and untied (9L34 MB1) ridges were severely retarded in their growth and gave practically no seed cotton at all. It might be advisable to experiment with various methods of planting during dry seasons and on lighter types of soil than the red soil on which the crop was grown this year.

Insect Pest Control.

No insecticidal trials were conducted, but the necessity for spraying during such a season was shown by the fact that sprayed areas gave a fair yield while the unsprayed areas gave practically no yield at all.

Areas sprayed with DDT and BHC became infested with red spider. No satisfactory means of control has been worked out but during the coming season an insecticide trial is being planned and this problem is being investigated.

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